



PTO/SB/088 (10-01)

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U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

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Complete if Known	
Application Number	10/626,907
Filing Date	07/25/2003
First Named Inventor	Van Dyke, et al.
Group Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned
Attorney Docket Number	SWRI-2966-03

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Signature	/Aaron Kosar/	Date Considered	10/30/2007
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¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

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PTO/SB/08A (10-01)

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 1 of 9

Complete if Known

Application Number	10/626.907
Filing Date	07/25/2003
First Named Inventor	MARK VAN DYKE
Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned

Attorney Docket Number SWRI-2966-03

U.S. PATENT DOCUMENTS

Examiner Initials	Cite No. ¹	Document Number Number-Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
/A.K./AI	us.	922.692	05-25-1909	B.B. GOLDSMITH	
	us.	926.999	07-06-1909	CARL NEUBERG	
	us.	960.914	06-07-1910	ARTHUR HEINEMANN	
	OI	3.642.498	02-15-1972	ANKER	
	EI	4.423.032	12-27-1983	ABE	
	FI	4.474.694	10-02-1984	COCO	
	GI	4.570.629	02-18-1986	WIDRA	
	H1	4.751.074	06-14-1988	MATSUNAGA	
	I1	4.895.722	01-23-1990	ABE	
	J1	5.047.249	09-10-1991	ROTHMAN	
	K1	5.505.952	04-09-1996	JIANG	
	L1	5.679.819	10-21-1997	JONES	
	M1	5.712.252	01-27-1998	SMITH	
	N1	5.955.549	09-21-1999	CHANG	
	O1	6.159.495	12-12-2000	TIMMONS	
/A.K./P1	us.	6.159.496	12-12-2000	BLANCHARD	
	US-				
	US-				
	US-				

FOREIGN PATENT DOCUMENTS

Examiner Initials	Cite No. ¹	Foreign Patent Document Country Code ³ -Number ⁴ Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
/A.K./Q1	EP 0 298 684 A3 A2		01-11-1989	Unilever PLC		
	R1	EP 0454 600 A1	10-30-1991	ICP FRANCE	(English Abstract Only)	
	S1	JP 4-189833	07-08-1992	TAKEDA Chemical		
	T1	WO 98/08550	03-05-1998	FUSION MEDICAL		
	U1	WO 93/22397	11-11-1993	MERCK		
/A.K./V1	EP 0 468 797 A2		01-29-1992	NIIGATA Hi-Spinner		

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Application Number	10/626,907
				Filing Date	07/25/2003
				First Named Inventor	MARK VAN DYKE
				Art Unit	Not Yet Assigned
				Examiner Name	Not Yet Assigned
Sheet	2	of	9	Attorney Docket Number	SWRI-2966-03

U.S. PATENT DOCUMENTS

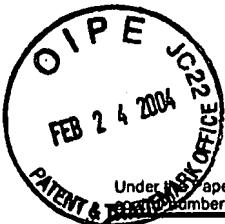
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Sheet

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First Named Inventor	MARK VAN DYKE
Group Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned

Attorney Docket Number SWRI-2966-03

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

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/A.K./	AD1	J.M. GILLESPIE, et al., "Amino Acid composition of a Sulphur-Rich Protein from Wool," BIOCHIM. BIOPHY. ACTA, (1960) pp. 538-539; Vol. 39.	
	AE1	KEITH H. GOUGH, et al., "Amino Acid Sequences of alpha -Helical Segments from S-Carboxymethylkeratine-A: Complete Sequence of a Type-I Segment," BIOCHEM. J. (1978), pp. 373-385; Vol. 173	
	AF1	THOMAS C. ELLEMAN, et al., "Amino Acid Sequences of alpha -Helical Segments from S-Carboxymethylkeratine-A: Statistical Analysis," BIOCHEM. J. (1978), pp. 387-391, Vol. 173.	
	AG1	DAVID McC. HOGG, et al., "Amino Acid Sequences of alpha-Helical Segments from S-Carboxymethylkeratine-A: Tryptic and Chymotryptic Peptides from a Type-II Segment," BIOCHEM. J. (1978), pp. 353-363; Vol. 173.	
	AH1	W. GORDON CREWTHER, et al., "Amino Acid Sequences of alpha -Helical Segments from S-Carboxymethylkeratine-A: Complete Sequence of a Type-II Segment," BIOCHEM. J. (1978), pp. 365-371; Vol. 173.	
	AI1	C. EARLAND, et al., "Studies on the Structure of Keratin: II. The Amino Acid Context of Fractions Isolated from Oxidized Wool," BIOCHEMICA ET BIOPHYSICA ACTA (1956), pp. 405-411, Vol. 22.	
	AJ1	J.M. GILLESPIE, et al., "Preparation of an Electrophoretically Homogeneous Keratin Derivative from Wool," Short Communications, Preliminary Notes, (1953), pp. 481-482, Vol. 12.	
	AK1	MAURICE J. FRENKEL, et al., "The Isolation and Properties of a Tyrosine-Rich Protein from Wool: Component 0.62," EUR. J. BIOCHEM, (1973) pp. 112-119, Vol. 34.	
	AL1	R.J. BLAGROVE, et al., "The Electrophoresis of the High-Tyrosine Proteins of Keratins on Cellulose Acetate Strips," Comp. Biochem. Physiol., (1975) pp. 571-572, Vol 50B.	
	AM1	ROBERT C. MARSHALL, et al., "Successful Isoelectric Focusing of Wool Low-Sulphur Proteins," Journal of Chromatography, (1979) pp. 351-356, Vol. 172.	
V	/A.K./	ROBERT C. MARSHALL, "Characterization of the Proteins of Human Hair and Nail by Electrophoresis," The Journal of Investigation Dermatology, (1983) pp. 519-524, Vol. 80.	

Examiner Signature	Date Considered
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4

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Examiner Name	Not Yet Assigned
Attorney Docket Number	SWRI-2966-03

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS		
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/A.K./ A01	A01	W. G. CREWTHER, et al. "Helix-Rich Fraction from the Low-Sulphur Proteins of Wool," Nature, (July 17, 1965) P. 295, No. 4994.
	A91	H. LINDLEY, et al., "Occurrence of the Cys-Cys Sequence in Keratins," J. Mol. Biol., (1967) pp. 63-67, Vol. 30.
	AG1	ROBERT C. MARSHALL, "Genetic Variation in the Proteins of Human Nail," The Journal of Investigative Dermatology, (1980) pp. 264-269, Vol. 75.
	AR1	M. E. CAMPBELL, et al., "Compositional Studies of High-and Low-Crimp Wools," Aust. J. Biol. Sci., (1972) pp. 977-87, Vol. 25.
	AS1	P.J. REIS, et al. "A Relationship between Sulphur Content of Wool and Wool Production by Merino Sheep," Aust. J. Biol. Sci., (1967) pp. 153-63, Vol. 20.
	AT1	ROBERT C. MARSHALL, et al., "The Keratin Proteins of Wool, Horn and Hoof from Sheep," Aust. J. Biol. Sci., (1977) pp. 389-400, Vol 30.
	AU1	J.M. GILLESPIE. "Reaction of Sodium Borohydride with Wool," Nature, (January 31, 1959) pp.322-23, Vol. 183.
	AV1	DAVID R. GODDARD, et al., "A Study on Keratin," J. Bio. Chem., (1934) pp. 605-14, Vol. 106.
	AW1	L.M. DOWLING, et al., "Isolation of Components from the Low-Sulphur Proteins of Wool by Fractional Precipitation Preparative Biochemistry," (1974) pp. 203-226, Vol. 4 (3).
	W1	W.G. CREWTHER, et al., "Reduction of S-Carboxymethylcysteine and Methionine with Sodium in Liquid Ammonia," Biochim. Biophys. Acta, (1969) pp. 609-611, Vol. 164.
↓/A.K./	AT1	W.T. AGAR, et al., "The Isolation from Wool of a Readily Extractable Protein of Low Sulphur Content," Biochim. Biophys Acta, (1958) pp. 225-226, Vol. 27.

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OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

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/A.K./A21	B1	H. LINDLEY, et al., "The Reactivity of the Disulphide Bonds of Wool," Biochem J. (1974) pp. 515-523, Vol. 139.	
	B21	M. SCHORNIG, et al., "Synthesis of Nerve Growth Factor mRNA in Cultures of Developing Mouse Whisker Pad, A Peripheral Target Tissue of Sensory Trigeminal Neurons," The Journal of Cell Biology, (March 1993) nn. 1471-1479, Volume 120, Number 6.	
	B31	S. MITSUI, et al., "Genes for a Range of Growth Factors and Cyclin-Dependent Kinase Inhibitors are Expressed by Isolated Human Hair Follicles," British Journal of Dermatology (1997) pp. 693-98, Vol. 137.	
	B41	B.K. FILSHIE, et al., "The Fine Structure of alpha -Keratin," J. Mol. Biol. (1961) pp. 784-786, Vol. 3.	
	B51	R.D.B. FRASER, et al., "Structure of alpha -Keratin," Nature, (February 28, 1959) pp. 592-94, Vol. 183.	
	B61	R.D.B. FRASER, et al. "Helical Models of Feather Keratin Structure," Nature, (September 22, 1962) pp. 1167-1168, Vol. 195.	
	B71	B.K. FILSHIE, et al., "An Electron Microscope Study of the fine Structure of Feather Keratin," The Journal of Cell Biology (1962) pp. 1-12, Volume 13.	
	B81	W.G. CREWTHER, et al., "Low-Sulfur Proteins from alpha -Keratins. Interrelationships between their Amino Acid Compositions, alpha-Helix Contents, and the Supercontraction of the Parent Keratin," BIOPOLYMERS (1966) pp. 905-916, Vol. 4.	
	B91	G.M. BHATNAGAR, et al., "The Conformation of the High-Sulphur Proteins of Wool I. The Preparation and Properties of a Water-Sulphur Metakeratin," Int. J. Protein Research I. (1969), nn. 199-212.	
	B101	W.G. CREWTHER, et al., "The Preparation and Properties of a Helix-Rich Fraction Obtained by Partial Proteolysis of Low Sulphur S-Carboxymethylkeratine from Wool," (1967) The Journal of Biological Chemistry (Issue of October 10), pp. 4310-4319, Vol. 242, No 19.	
/A.K./A31	D.A.D. PARRY, et al., "Structure of alpha -Keratin: Structural Implication of the Amino Acid Sequences of the Type I and II Chain Segments," J. Mol. Biol. (1977) pp. 449-454, Vol. 113.		

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Sheet 6 of 9

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First Named Inventor	MARK VAN DYKE
Group Art Unit	Not Yet Assigned
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/A.K. BK	BK	E. SUZUKI, et al., "X-Ray Diffraction and Infrared Studies of an alpha -Helical Fragment from alpha -Keratin," J. Mol. Biol. (1973) pp. 275-278, Vol. 73.	
	BL1	G.M. BHATNAGAR, et al., "The Conformation of the High-Sulphur Proteins of Wool: II. Difference Spectra of Keratine-B," Int. J. Research, (1969) pp. 213-219.	
	BM1	DEAN R. HEWISH, et al., "In Vitro Growth and Differentiation of Epithelial Cells Derived from Post-Embryonic Hair Follicles," Aust. J. Biol. Sci., (1982) pp. 103-109, Vol. 35.	
	BN1	A.M. DOWNES, et al., "A Study of the Proteins of the Wool Follicle," Aust. J. Biol. Sci., (1966) pp. 319-33, Vol. 19.	
	BO1	G. E. ROGERS, et al., "Keratin Protofilaments and Riobsomes from Hair Follicles," Nature, (January 2, 1965), pp. 77-78, Vol. 205.	
	BP1	P.M. STEINERT, et al., "In Vitro Studies on the Synthesis of Guinea Pig Hair Keratin Proteins," Biochimica et Biophysica Acta, (1973) pp. 403-412, Vol. 312.	
	BQ1	G.E. ROGERS, et al., "Some Observations on the Proteins of the Inner Root Sheath Cells of Hair Follicles," Biochimica et Biophysica Acta, (1958) pp. 33-43, Vol. 29.	
	BR1	LESLIE N. JONES, et al., "Studies of Developing Human Hair Shaft Cells in Vitro," The Journal of Investigative Dermatology, (January 1988) pp. 58-64, Vol. 90.	
	BS1	TREVOR JARMAN, et al., "Prospects for Novel Biomaterials Development," Online Publications, Pinner, UK, Presented at Biotech '85 (Europe) (1985) pp. 505-512.	
	BT1	AKIRA TACHIBANA, et al., "Fabrication of Wool Keratins Sponge Scaffolds for Long-Term Cells Cultivation," Journal of Biotechnology, (2002) pp. 165-170, Vol. 93.	
V /A.K./	BW1	J.M. Gillispie, et al., "Periodicity in High-sulphur Proteins from Wool," Nature, (September 18, 1965) pp. 530-531, Vol. 246.	

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/A.K.	BV1	KIYOSHI YAMAUCHI, "The Development of Keratin: Characteristics of Polymer Films," [Research Report]; pp. 1-12.	
	BW1	"Scattering to Structural Foams, Skin, Synthetic" Encyclopedia of Polymer and Science and Engineering, (1989) pp. 335-345, Vol. 15.	
	BX1	J.M GILLESPIE, et al., "Proteins Rich in Glycine and Tyrosine from Keratins," Comp. Biochem. Physiol., (1972) pp. 723-734, Vol. 41B.	
	BY1	R.D.B. FRASER, et al., "Tyrosine-Rich Proteins in Keratins," Comp. Biochem. Physiol., (1973) pp. 943-947, Vol. 44B.	
	BZ1	J.M. GILLESPIE, et al., "Relation Between the Tyrosine Content of Various Wools and their Content of a Class of Proteins Rich In Tyrosine and Glycine," Aust. J. Biol. Sci., (1971) pp. 1189-97, Vol 24.	
	CA1	J.M. GILLESPIE, et al., "The Macroheterogeneity of Type I Tyrosine-rich Proteins of Merino Wool," Aust. J. Biol. Sci., (1974) pp. 617-27, Vol. 27.	
	CB1	E.G. BENDIT, et al., "The Probable Role and Location of High-Glycine-Tyrosine Proteins in the Structure of Keratins," BIOPOLYMERS, (1978) pp. 2743-2745, Vol. 17.	
	CC1	ROBERT C. MARSHALL, et al. "High-sulphur Proteins from alpha -Keratins: 11.* Isolation and Partial Characterization of Purified Components from Mouse Hair," Aust. J. Biol. Sci. (1976) pp. 11-20, Vol. 29.	
	CD1	ROBERT C. MARSHALL, et al. "High-Sulphur Proteins from alpha -Keratins: 1. Heterogeneity of the Proteins from Mouse Hair," Aust. J. Biol. Sci. (1976) pp. 1-10, Vol. 29.	
	CE1	R. L. DARSKUS, et al. "The Possibility of Common Amino Acid Sequences in High-Sulphur Protein Fractions From Wool," Aust. J. Biol. Sci. (1969) pp. 1197-1204, Vol. 22.	
↓	CF1	ROBERT C. MARSHALL, et al. "Heterogeneity and Incomplete Disulfide Reduction in the High-Sulfur Proteins of Wool," Aust. J. Biol. Sci. (1978) pp. 219-229, Vol. 31.	
/A.K./			

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 8 of 9

Complete if Known

Application Number	10/626,907
Filing Date	07/25/2003
First Named Inventor	MARK VAN DYKE
Group Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned
Attorney Docket Number	SWRI-2966-03

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials ¹	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
/A.K./	CG1	H. LINDLEY, et al., "The Preparation and Properties of a Group of Proteins from the High-Sulphur Fraction of Wool," Biochem. J. (1972) pp. 859-867, Vol. 128.	
	CH1	J.M. GILLESPIE, et al., "Evidence of Homology in a High-Sulphur Protein Fraction (SCMK-B2) of Wool and Hair alpha-Keratins," Biochem. J. (1968) pp. 193-198, Vol. 110.	
	CJ1	J.M. GILLESPIE, et al., "A Comparative Study of High-Sulphur Proteins from alpha-Keratins," Comp. Biochem. Physiol. (1965) pp. 175-185, Vol. 15.	
	CJ1	J.M. GILLESPIE, et al., "High-Sulphur Proteins as a Major Cause of Variation in Sulphur Content Between alpha-Keratins," Nature (September 18, 1965) pp. 1293-94, Vol. 207.	
	CK1	R.D.B. FRASER, et al., "Molecular Organization in Alpha-Keratin," Nature, (March 17, 1962) pp. 1052-1055, Vol. 193.	
	CL1	DR. P. ALEXANDER, et al., "Structure of Wool Fibres," Nature, (September 2, 1950) pp. 396-398.	
	CM1	NODE, et al., "Hard Acid and Soft Nucleophilic System. 2. Demethylation of Methyl Ethers of Alcohol and Phenol with an Aluminum Halide-Thiol System," J. Org. Chem (1980), pp. 4275-4277, Vol. 45.	
	CN1	ITO, et al., "Biocompatibility of Denatured Wool Keratin," Konbushi Ronbunshu [Collected Essays on Polymers], (April 1982) pp. 249-256, Vol. 39, No. 4. English Abstract Only	
	CO1	TATSUYA and ISHII, "Keratin Protein High Pressure Molded Article," Japanese Patent Application, (Dec. 03, 1993), total of six pages, Public Patent Announcement 1993-320358.	
	CP1	SAEKI, YOKOGAWA, and UEHARA, "Production Method For Water-soluble Keratin Protein," Japanese Patent Application, (February 21, 1990), total of five pages, Public Patent Announcement 1990-51533.	
↓	CQ1	MIYAMOTO and TSUSHIMA, "A Method for Preparing a Keratin Substance with a Low Molecular Weight," Japanese Patent Application, (July 8, 1982), total of five pages; Public Patent Disclosure Bulletin S57-109797.	
/A.K./			

Examiner Signature	Date Considered
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Sheet 9 of 9

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<u>Application Number</u>	10/626,907
<u>Filing Date</u>	07/25/2003
<u>First Named Inventor</u>	MARK VAN DYKE
<u>Group Art Unit</u>	Not Yet Assigned
<u>Examiner Name</u>	Not Yet Assigned
<u>Attorney Docket Number</u>	SWRI-2966-03

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Signature	/Aaron Kosar/	Date Considered	10/30/2007
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Substitute for form 1449/PTO		Complete If Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>		Application Number	10/626,907
		Filing Date	July 25, 2003
		First Named Inventor	Van Dyke
		Art Unit	Not yet assigned
		Examiner Name	Not yet assigned
		Attorney Docket Number	SwRI-2966-03
Sheet	1	of	2

FOREIGN PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code ³ Number ⁴ Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Column, Lines, Where Relevant Passages Or Relevant Figures Appear
/A.K.	C2	WO 03008006	01-30-2003	PHANEUF, M	

Examiner Signature		Date Considered	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Complete if Known

Application Number	10/626,907
Filing Date	July 25, 2003
First Named Inventor	Van Dyke
Art Unit	Not yet assigned
Examiner Name	Not yet assigned
Attorney Docket Number	SwRI-2966-03

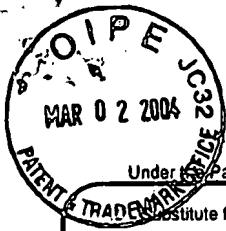
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Sheet 1 of 2

Complete If Known

Application Number	10/626,907
Filing Date	July 25, 2003
First Named Inventor	Van Dyke
Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned
Attorney Docket Number	SwRI-2966-03

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
/A.K./	A3	US- 6124265	09-26-2000	Smith, et al.	
	B3	US- 6165496	12-26-2000	Smith, et al.	
	C3	US- 3677693	07-18-1972	Fillingham	
	D3	US- 6352699	03-05-2002	Mondet, et al.	
	E3	US- 5300285	04-05-1994	Halloran, et al.	
	F3	US- 5412076	05-02-1995	Gagnieu	
	G3	US- 3250682	05-10-1966	Wilmsmann, et al	
	H3	US- 5258501	11-02-1993	Barbaric, et al.	
	I3	US- 4504644	03-12-1985	Lang, et al.	
	J3	US- 2434688	01-20-1948	Evans	
	K3	US- 5276138	01-04-1994	Yamada, et al.	
	L3	US- 5520925	05-28-1996	Maser	
/A.K./	M3	US- 5948432	09-07-1999	Smith, et al.	
	US-				

FOREIGN PATENT DOCUMENTS

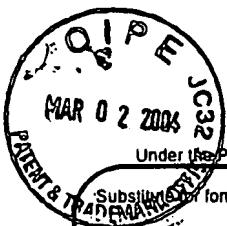
Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T ⁶
		Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)				
/A.K./	N3	EP 0540357	05-05-1993	Jones, et al.		
/A.K./	O3	EP 0097907	01-11-1984	Haller		
/A.K./	P3	WO 9931167	06-24-1999	Vanderhoff, et al.		

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Application Number	10/626,907
Filing Date	July 25, 2003
First Named Inventor	Van Dyke
Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned
Attorney Docket Number	SwRI-2966-03

Sheet 2 of 2

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
/A.K./	Q3	TANAKA, YOSHIO ET AL., Reaction of Wool Keratin With Epoxides, Proceedings International Wolltextil-Forschungskonf, Vol. 3, 1976, pp. 192-201	
/A.K./	R3	FRAENKEL-CONRAT, H., The Action of 1,2-Epoxides on Proteins, Journal of Biological Chemistry, vol. 154, no. 1, June 1, 1944	

Examiner Signature	/Aaron Kosar/	Date Considered	10/30/2007
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 1 of 1

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Application Number	10/626,907
Filing Date	07/25/2003
First Named Inventor	VAN DYKE, et al.
Group Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned
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